



CH2MHILL

CH2M HILL

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October 16, 2008

State Water Resources Control Board
Office of Chief Counsel
Ms. Jeannette L. Bashaw, Legal Analyst
P.O. Box 100
Sacramento, CA 95812-0100

Subject: Filing for Petition to Review Cleanup and Abatement Order R5-2008-0712, Site Cleanup Program Case#2050298, UPRR Storrie Derailment, Plumas County

Dear Ms. Bashaw:

On behalf of the Union Pacific Railroad Company (Union Pacific), CH2M HILL wishes to petition the State Water Resources Control Board to review the Cleanup and Abatement Order R5-2008-0712 issued September 23, 2008 by the Central Valley Region, Regional Water Quality Control Board (Central Valley Water Board) titled *Cleanup and Abatement Order R5-2008-0712, Site Cleanup Program Case#2050298, UPRR Storrie Derailment, Plumas County* (Order) regarding the Storrie, CA June 30, 2007 Derailment (Site) for the following reasons:

Petition to correct factual and typographical errors:

- In the Background section, Paragraph 7, page 2 makes reference to an issue date of 29 August 2007. CH2M HILL petitions to correct the date that the 13267 Order was issued with a date of 31 August 2007.
- In the Background section, Paragraph 10, page 3 and throughout the Order, CH2M HILL petitions to correct the spelling of the referenced hydraulic mixing zone from "hyporheric" to "hyporheic".
- In the Background section, Paragraph 11, page 3 references the lightning strikes and fires that burned portions of Butte and Plumas Counties. CH2M HILL petitions to add a sentence after the first sentence in the paragraph that reads as follows: "Road closures, as a result of the fires, prevented access to the site by the Discharger from 22 June until 14 July 2008."
- In the Background section, Paragraph 13, page 3 states: "that the Discharger provided evidence of a signed access agreement on 1 July 2008." CH2M HILL petitions to change the sentence to read as follows: "On 20 June 2008 the Discharger provided evidence of a signed access agreement as specified in the Regional Board's *Approval, Work Plan for Biosparge and Monitoring Well Installation, and Request for Further Site Investigation, Site Cleanup Program Case#2050298, UPRR Storrie Derailment, Plumas County* dated 30 May 2008."

- In the Background section, Paragraph 14, page 3 states: "the Discharger uploaded all plans and reports to Geotracker." CH2M HILL petitions to change the wording in the sentence to read as follows: "As requested by the Central Valley Water Board the Discharger uploaded all reports and work plans to Geotracker on 30 May 2008 and approval of the submittals by the Geotracker administrator was received on 24 July 2008."
- In the Background section, Paragraph 14, page 3 states: "The Discharger ran a skid-mounted SVE system, has pilot tested a biosparge system and on 2 September 2008 submitted the results." CH2M HILL petitions to replace the above sentence with the following sentences: "The Discharger ran a skid-mounted SVE system as part of a vapor extraction pilot study and on 29 August 2008 submitted results of the vapor extraction pilot study to the Central Valley Water Board Staff. The Discharger also completed a pilot test of a biosparge system and on 30 September 2008, submitted the results to the Central Valley Water Board Staff."
- In the Background section, Paragraph 14, page 3 states: "Based on the results, the Discharger recommends further biosparging and discontinuing SVE." CH2M HILL petitions to replace the above sentence with the following sentence "Based on the results, the Discharger recommends discontinuing SVE."

Petition to change additional statements on technical merit:

- In the Background section, Paragraph 5, page 2 states: "Further near source waste has affected soil drainage properties." This occurrence is not proven, and CH2M HILL petitions to change the sentence to read as follows: "Further, near-source waste *may* have affected soil drainage, has stressed vegetation, and *may* threaten slope stability."
- In the Background section, Paragraph 9, page 3 states that the ethanol biodegradation may result in unsafe methane concentrations, which pose an explosion hazard. CH2M HILL petitions to change the wording in the sentence to read as follows: "Staff is also concerned that ethanol biodegradation may result in unsafe methane concentrations, which *may* pose an explosion hazard."
- In the Background section, Paragraph 14, page 4 states that the Discharger proposes further slope stability monitoring through an approved Storm Water Pollution Prevention Plan (SWPPP). CH2M HILL petitions to remove reference to the SWPPP as this document does not address slope stability issues and for the sentence to read as follows: "The Discharger proposes further slope stability monitoring."
- In the Authority - Legal Requirements section, Paragraph 24, page 6 lists the proposed cleanup levels for the Site constituents of concern. CH2M HILL petitions that reference to cleanup levels be removed from the Order and to allow the Discharger to demonstrate what is technically feasible to achieve at the Site. The values selected are the most stringent, theoretical interpretation of the narrative standards presented in the Basin Plan. CH2M HILL petitions to establish cleanup levels by all parties at a later time.
- In the Discharger Liability section, Paragraph 29, page 7 makes reference to waste that has been discharged. CH2M HILL petitions to remove reference to the phrases "is

discharging" and "is suspected of discharging" and for the sentence to read as follows: ".....the Discharger is subject to an order pursuant to CWC section 13267 to submit technical reports because existing data and information about the site indicate that waste has been discharged at the property.....".

- In the Vertical Conduit Evaluation section, Paragraph 1, page 8 makes reference to polluted depth intervals in the private domestic well. CH2M HILL petitions to remove reference to the words "polluted depth" and for the sentence to read as follows: "...collect appropriate groundwater samples and borehole geophysical data to assess groundwater quality at varying intervals in the impacted Storrie Retreat private domestic well.....".
- Attachment 2, Site Conceptual Model is not to scale and does not accurately represent the grade and local terrain or surface features. CH2M HILL petitions for a note to be added to the Attachment stating that the graphic is not to scale.

Petition to clarify and revise action items specified in the Order;

Discussions and telephone conversations with the Central Valley Water Board Staff subsequent to the Order indicate the Discharger has previously met some of the requests of the Order. Additionally, the language of the Order is not clear in what it requests the Discharger to do and the language on the cover letter of the Order in some cases contradicts the required actions included on pages 8 and 9. Current understanding of the requirements of the Order as indicated by the Central Valley Water Board Staff are as follows:

- Requirement for domestic well assessment as a vertical pollution conduit by 31 October 2008 (first bullet, page 1) - It is now understood that the Discharger is to provide a work plan for assessment of the domestic well as vertical pollution conduit by the 31 October 2008, with implementation of the work plan by 15 December 2008 and a report of findings by 15 January 2009.
- Requirement for report of full-scale biosparge startup operations by 31 October 2008 (second bullet, page 1) - It is now understood per the Central Valley Board's *Request for Full-Scale Biosparge Treatment System Work Plan, Cleanup and Abatement Order R5-2008-0712, Site Cleanup Program Case #2050298, UPRR Storrie Derailment, Plumas County* (Letter) dated 8 October 2008 that the Discharger had already met the intent of the request in the Order and is now to prepare an appropriate work plan presenting the design, installation and operation of a biosparge system including a time schedule for implementation to address Central Valley Board's concerns as stated in the Letter by 31 October 2008.
- Requirement of contingencies for soil vapor methane greater than or equal to 10 percent of its lower explosive limit by 31 October 2008 (second bullet, page 1) - It is now understood that the Discharger will prepare a contingency plan by 31 October 2008 which will propose sub-slab monitoring of structures located on the Site with contingencies for sampling frequency and remedial alternatives if the methane limit is reached.
- Requirement of contingencies for pollutants in hyporheic water or down-gradient monitoring wells that indicate threats to the Feather River by 31 October 2008 (second

Ms. Jeannette L. Bashaw

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bullet, page 1) - It is now understood that the Discharger will address this requirement by continuing the 2008 sampling schedule including groundwater monitoring well sampling on a monthly basis and Feather River sampling on a weekly basis (test pit samples will be collected in lieu of a river sample on a monthly basis if the locations are accessible). No action is required by 31 October 2008.

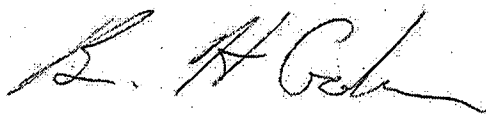
- Requirement for submittal of an appropriate contingency plan for significant slope failure by 31 October 2008 (third bullet, page 1) - It is now understood that the Discharger will prepare a monitoring, preventative maintenance and contingency plan by 31 October 2008.

Union Pacific wishes to reserve the right to have the Order corrected and clarified. Union Pacific and its consultants are currently addressing the requested actions in the Order and intend to complete the requested actions as they currently understand them by the deadlines contained in the Order. A meeting is currently scheduled with a representative of the Central Valley Water Board Staff on 23 October 2008 to further discuss the requested actions, clarify inconsistencies in the Order, and correct both factual and typographical errors contained in the Order.

Copies of this petition have been sent to the Central Valley Regional Water Quality Control Board and to Union Pacific. If you have any questions regarding this petition, please contact me at 916-286-0413 or at bgarber@ch2m.com.

Sincerely,

CH2M HILL, INC.



Brian Garber

Senior Project Manager

cc: Mr. Eric Rapport, Central Valley Regional Water Quality Control Board
Ms. Karen Clementsen, Central Valley Regional Water Quality Control Board
Mr. Jim Diel, Union Pacific Railroad
Mr. Bob Bylsma, Union Pacific Railroad
Mr. Jim Curtis, CH2M HILL
Ms. Tricia Carter, CH2M HILL



California Regional Water Quality Control Board Central Valley Region

Karl E. Longley, ScD, P.E., Chair



Linda S. Adams
Secretary for
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Arnold Schwarzenegger
Governor

23 September 2008

CERTIFIED MAIL
7007 0220 0003 1934 3762

Mr. James E. Diel
Union Pacific Railroad
9451 Atkinson Street, Suite 100
Roseville, CA 95747

CLEANUP AND ABATEMENT ORDER R5-2008-0712, SITE CLEANUP PROGRAM CASE#2050298, UPRR STORRIE DERAILMENT, PLUMAS COUNTY

Enclosed is Cleanup and Abatement Order R5-2008-0712 (Order), issued pursuant to Section 13304 of the California Water Code for the discharges of waste, and threatened discharges of waste. This Order instructs Union Pacific Railroad, Discharger, to investigate, clean up, and abate forthwith the effects of the waste discharged as a result of the 30 June 2007 train derailment at Storrie, Plumas County. Compliance with this Order shall include, but not be limited to, completing the tasks listed below:

- **By 31 October 2008**, assess the impacted Storrie Retreat private domestic well as a vertical pollution conduit, recommend appropriate action, and provide a time schedule for implementation.
- **By 31 October 2008**, submit a report of full scale biosparge startup operations, and recommend appropriate contingencies for future discovery of the Storrie domestic well as a vertical conduit, soil vapor Methane $\geq 10\%$ of its lower explosive limit, and pollutants in hyporheic water or down-gradient monitoring wells that indicate threats to the Feather River.
- **By 31 October 2008**, submit an appropriate contingency plan for significant slope failure near the derailment site; an earth-, debris-, or rock-slide, potentially related to the 30 June 2007 waste discharge, and beyond the scope of an approved Storm Water Pollution Prevention Plan.
- Submit **Quarterly Status Reports** by the 1st day of the second month after the calendar quarter in which the samples were collected.

Failure to comply with the enclosed Order may result in further enforcement action pursuant to Section 13350 of the California Water Code, which may result in civil liabilities of up to five thousand dollars (\$5,000) to fifteen thousand dollars (\$15,000) per day for each violation. In



addition, the Board may seek injunctive relief by authorizing the Attorney General to petition the Superior Court for an injunction requiring compliance with the Order. The Court may grant a prohibitory injunction stopping all activities until compliance is achieved.

If you have any questions, please contact Eric Rapport of my staff at (530) 224-4998 or the letterhead address.

Original signed by

JAMES C. PEDRI, P.E.
Assistant Executive Officer
Shasta Cascade Watershed

EJR: sae/knr

Attachment: Cleanup and Abatement Order R5-2008-0712

cc with attachment:

Pamela Creedon, Regional Board, Sacramento
Patrick Pulupa, State Board, Sacramento
Jana Milliken, US Fish and Wildlife, Sacramento
Jane Vorpapel, California Department of Fish and Game, Redding
Robert A. Meacher, Supervisor, County of Plumas, Quincy
Jerry Sipe, Plumas County Environmental Health Department, Quincy
Jim Perez, Plumas County Environmental Health Department, Quincy
Joseph Weninger, Crow Law Firm, Sacramento
Loren and Rhonda Perkins, Storrie
Tricia Carter, CH2M Hill, Sacramento

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

CLEANUP AND ABATEMENT ORDER NO. R5-2008-0712
FOR

UNION PACIFIC RAILROAD

STORRIE, PLUMAS COUNTY

This Order is issued to Union Pacific Railroad (UPRR, hereafter Discharger), based on provisions of California Water Code (CWC) section 13304, which authorizes the California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board) to issue a Cleanup and Abatement Order (Order), and CWC section 13267, which authorizes the Central Valley Water Board to require preparation and submittal of technical and monitoring reports.

The Executive Officer finds, with respect to the Discharger's acts or failures to act, the following:

PROPERTY OWNERSHIP AND OPERATIONS

1. Since 1909, the Discharger has owned and operated the Feather River Route, a rail line that in part follows the North Fork Feather River Canyon, roughly parallel with State Highway 70 between Oroville, Butte County, and Keddie, Plumas County. UPRR currently runs about fifteen freight trains per day along the route. There has been a recent history of discharge from this portion of the rail line. For example, see Administrative Civil Liability Complaint No. 95-506, charging the Discharger with liability for a 1995 diesel fuel discharge at a rockslide-related derailment near Poe. Complaint No. 95-506 cites five other discharges from 1993 to 1995; four were due to train collisions with rocks.
2. On 30 June 2007, one of the Discharger's freight trains derailed due to a rock fall on the Feather River Route at Storrie, Township 24 North, Range 6 East, southeast quarter, Section 20, Mount Diablo Baseline and Meridian, about 400 feet from the Feather River channel. Two punctured tank cars discharged waste onto the Discharger's right-of-way (approximately 100 feet from the track centerline), United States Forest Service land (not parceled); and Plumas County Assessor's Office parcel 002-280-005. Parcel 002-280-005 is a 1.94-acre site owned by Loren and Rhonda S. Perkins, currently doing business as Storrie Retreat. During the derailment, about 30,000 gallons of denatured Ethanol and 20,000 gallons of canola oil discharged and co-mingled. On 2 July 2007, 500 more gallons of canola oil discharged during emergency response. At the Storrie Retreat, waste discharged near a private residence, several rental units, an ornamental trout pond, and a private domestic well. See Attachment 1, a vicinity map, which is part of this Order.
3. As described in Findings 1 through 2, the Discharger is subject to this Order because it caused or permitted, causes or permits, or threatens to cause or permit, the discharge of waste where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance.

BACKGROUND

4. Chemical reports of the denatured Ethanol, sampled 19 June 2007, identified, in percent by volume, Ethanol, 95.81, Methanol, 0.03, and denaturants, 3.78. Denaturants were, in percent by volume, Benzene, 0.5 (1.89 percent of the total), and other aromatics, 1.2 (0.05 percent of the total). The effect of canola oil on the above pollutants is currently unknown.
5. The discharged waste followed several pathways; it volatilized, flowed overland, entered streambeds and culverts, infiltrated into local fill and alluvium, penetrated into underlying fractured granite bedrock, and began to bio-degrade. Emergency responders effectively mitigated the waste discharge that flowed overland and as channelized flow. However, waste impacted groundwater in alluvium, fractured bedrock, and an on-site domestic well, and threatens the Feather River. Also, pollution volatilizing from the water table potentially threatens indoor air quality. Further, near-source waste has affected soil drainage properties and stressed vegetation, thereby threatening slope stability. See Attachment 2, a site conceptual model, which is part of this Order.
6. During emergency response, crews diverted surface water that had flowed to a small ornamental fish pond near a private residence at the Storrie Retreat. The pond, formerly with influent both from surface water and a spring box, lost the surface water component. Several hundred captive trout subsequently died. Current evidence links the fish-kill to asphyxiation.
7. On 29 August 2007, the Assistant Executive Officer issued the Discharger an order to submit information for the Storrie derailment pursuant to CWC section 13267 (hereafter "13267 Order"). The 13267 Order required the Discharger to investigate near-source biodegradation, slope stability, indoor air quality, groundwater, and surface water.
8. The Discharger complied with the 13267 Order. The Discharger installed a network of groundwater monitoring wells in alluvium and fractured bedrock, installed and operated a soil vapor extraction system, stabilized slopes, further monitored slope stability over the wet season, and performed a toxicological evaluation of indoor air quality.
9. Recent groundwater results warrant action beyond the scope of the initial 13267 Order. While previous results showed limited pollution, on 19 March and 13 April 2008, Ethanol and Benzene in monitoring wells were to 3,200,000, and 42 micrograms/Liter ($\mu\text{g/L}$), respectively. Other constituents were also detected. On 30 April 2008, the Discharger provided Central Valley Water Board staff with results from the Storrie Retreat private domestic well. These showed Ethanol and Benzene, at 13,000, and 2.2 $\mu\text{g/L}$, respectively, as well as other constituents. On or about that date, the Discharger red-tagged the private well and began to provide the Storrie Retreat with temporary alternative potable water. Staff is concerned that the domestic well, with a sanitary seal to 21 feet below grade surface (bgs), open to formation from 62 to 325 feet bgs, is a vertical pollution conduit. Staff also considers recent Ethanol increases as evidence of

- a greater threat to indoor air than previously estimated by the Discharger. Staff is also concerned that Ethanol biodegradation may result in unsafe Methane concentrations, which pose an explosion hazard.
10. On 5 May 2008, Central Valley Water Board staff sampled hyporheic water from test pits beside the Feather River channel (see Attachment 1). Results showed, in $\mu\text{g/L}$; Benzene, 4.1, Toluene, 5.8, Ethylbenzene, 0.2 (estimated), total Xylenes, 1.2 (estimated), as well as other constituents. Staff considers these results as evidence that waste discharge from the derailment may be impacting the Feather River.
 11. On 21 June 2008, lightning strikes caused the Butte Lightning Complex Fire, which burned 59,440 acres in Butte and Plumas Counties. Forest directly up-slope of the discharge site partially burned; see Attachment 1. Staff is concerned that increased run-off during the upcoming wet season may further impact slope stability near the waste discharge point and may affect local aquifer recharge, thereby altering pollutant flow paths.
 12. As described in Findings 4 through 11, the Discharger is responsible for cleanup of waste under this Order because it has caused or permitted, and currently causes or permits, waste to be discharged into the waters of the state and where it has created a condition of pollution or nuisance.
 13. On or about 22 May 2008, the Discharger stopped work pending receipt of a signed access agreement with the Storrie Retreat. The Discharger had previously been investigating the site with only verbal consent. On 30 May 2008, Central Valley Water Board staff requested that the Discharger electronically up-load all reports and work plans onto Geotracker (the State Water Resources Control Board public access database), provide evidence of a signed, written access agreement with the Storrie Retreat, recommend appropriate permanent alternative potable water for the private well owners, resume operating a soil vapor extraction (SVE) system, sample hyporheic water near the Feather River channel as safely as feasible on a monthly basis, continue quarterly groundwater monitoring, and report findings on a biosparge pilot test, slope stability, indoor air, and threats to the Feather River. On 1 July 2008, the Discharger provided evidence of a signed access agreement and resumed work. Further investigation is in progress; see Attachment 1.
 14. On 24 July 2008, the Discharger further responded to the 30 May 2008 request. The Discharger uploaded all plans and reports to Geotracker. The Discharger committed to provide appropriate replacement water to the Storrie Retreat, and on 2 September 2008 submitted an alternative domestic potable water supply evaluation. Staff acknowledges the commitment and evaluation, however needs further assessment of the domestic well as a vertical pollution conduit, and a time schedule for implementation. The Discharger ran a skid-mounted SVE system, has pilot tested a biosparge system, and on 2 September 2008 submitted results. Based on pilot test results, the Discharger recommends further biosparging and discontinuing SVE. Staff concurs with this course of action. The Discharger proposes further slope stability monitoring through an approved Storm Water Pollution Prevention Plan. Staff concurs, however, staff remains

concerned due to developing soil cracks at the spill site, recent wildfires up-slope, and the upcoming wet season. The Discharger has further sampled indoor air per staff's request. Staff acknowledges the Discharger's efforts but remains concerned about indoor air and the vadose zone due to potential Methane build-up. The Discharger has also further sampled hyporheric water and reports no current impacts to the Feather River. Staff remains concerned about potential future impacts to the river due to potentially high pollutant migration rates in up-gradient groundwater.

AUTHORITY – LEGAL REQUIREMENTS

15. CWC section 13304(a) provides that:

"Any person who has discharged or discharges waste into waters of the state in violation of any waste discharge requirements or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including but not limited to, overseeing cleanup and abatement efforts. A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner. Upon failure of any person to comply with the cleanup or abatement order, the Attorney General, at the request of the regional board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant."

16. CWC section 13304(f) provides that:

"Replacement water provided pursuant to subdivision (a) shall meet all applicable federal, state and local drinking water standards and shall have comparable quality to that pumped by the public water system or private well owner prior to the discharge of waste"

17. CWC section 13267(b)(1) provides that:

"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the

quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports; and shall identify the evidence that supports requiring that person to provide the reports."

18. CWC section 13304(c)(1) provides that:

"If waste is cleaned up or the effects of the waste are abated, or, in the case of threatened pollution or nuisance, other necessary remedial action is taken by any government agency, the person or persons who discharged the waste, discharges the waste, or threatened to cause or permit the discharge of the waste within the meaning of subdivision (a), are liable to that government agency to the extent of the reasonable costs actually incurred in cleaning up the waste, abating the effects of the waste, supervising cleanup or abatement activities, or taking other remedial actions. . ."

19. The State Water Resources Control Board (hereafter State Board) has adopted Resolution No. 92-49, the *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304*. This Policy sets forth the policies and procedures to be used during an investigation or cleanup of a polluted site and requires that cleanup levels be consistent with State Board Resolution 68-16, the *Statement of Policy With Respect to Maintaining High Quality of Waters in California*. Resolution 92-49 and the Basin Plan establish the cleanup levels to be achieved. Resolution 92-49 requires the waste to be cleaned up to background, or if that is not reasonable, to an alternative level that is the most stringent level that is economically and technologically feasible in accordance with California Code of Regulations, title 23, section 2550.4. Any alternative cleanup level to background must (1) be consistent with the maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial use of such water; and (3) not result in water quality less than that prescribed in the Basin Plan and applicable Water Quality Control Plans and Policies of the State Board.
20. Chapter IV of the Basin Plan contains the *Policy for Investigation and Cleanup of Contaminated Sites*, which sets forth the Central Valley Water Board's policy for managing contaminated sites. This policy is based on CWC sections 13000 and 13304, California Code of Regulations, title 23, division 3, chapter 15, and California Code of Regulations, title 27, Division 2, Subdivision 1, and State Water Board Resolution Nos. 68-16 and 92-49. The policy includes site investigation, source removal or containment, information required to be submitted for consideration in establishing cleanup levels, and the basis for establishment of soil and groundwater cleanup levels.

21. The State Board adopted the *Water Quality Enforcement Policy*, which states in part:

"At a minimum, cleanup levels must be sufficiently stringent to fully support beneficial uses, unless the RWQCB allows a containment zone. In the interim, and if restoration of background water quality cannot be achieved, the CAO should require the discharger(s) to abate the effects of the discharge. Abatement activities may include the provision of alternate water supplies." (Enforcement Policy, p. 19.)"

22. The Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, 4th Edition* (hereafter Basin Plan) designates beneficial uses of the waters of the State, establishes water quality objectives (WQOs) to protect these uses, and establishes implementation policies to implement WQOs. The designated beneficial uses of the groundwater beneath the Site are domestic, municipal, industrial, and agricultural supply.
23. The wastes detected at the site are not naturally occurring, and some are known human carcinogens. These wastes impair or threaten to impair the beneficial uses of the groundwater.
24. WQOs listed in the Basin Plan include numeric WQOs, e.g., state drinking water maximum contaminant levels (MCLs), and narrative WQOs, including the narrative toxicity objective and the narrative tastes and odors objective for surface and groundwater. Chapter IV of the Basin Plan contains the *Policy for Application of Water Quality Objectives*, which provides that "[w]here compliance with narrative objectives is required (i.e., where the objectives are applicable to protect specified beneficial uses), the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives." Testing of petroleum hydrocarbons has identified a number of constituents that are not present in groundwater unaffected by the discharge and that could exceed a narrative WQO. All of these are constituents of concern. The numerical limits for the constituents of concern listed in the following table implement the Basin Plan WQOs.

Constituent	Limits	WQO	Reference
Ethanol	760,000 ug/L	Tastes and Odor	Taste and Odor Threshold
Methanol	3,500 ug/L	Toxicity	USEPA Integrated Risk Information System Reference Dose as a drinking water level
Benzene	0.15 µg/l	Toxicity	California Public Health Goal (OEHHA)
Toluene	42 µg/l	Taste and Odor	Federal Register, Vol. 54, No. 97

Constituent	Limits	WQO	Reference
Ethylbenzene	29 µg/l	Taste and Odor	Federal Register, Vol. 54, No. 97
Total Xylenes	17 µg/l	Taste and Odor	Federal Register, Vol. 54, No. 97

µg/L=micrograms/Liter

25. The constituents listed in Findings 4, 9, and 10 are wastes as defined in CWC section 13050(d). The contaminated groundwater exceeds the WQOs for the constituents listed in Finding 24. The exceedance of applicable WQOs in the Basin Plan constitutes pollution as defined in CWC section 13050(l)(1).
26. The constituents listed in Finding No. 24 are present in groundwater due to the wastes from discharge, are injurious to health or impart objectionable taste and odor when present in drinking water, and affect a considerable number of persons. As such, a condition of nuisance is created, as defined in CWC section 13050(m).

DISCHARGER LIABILITY

27. As described in Findings 3 and 12, the Discharger is subject to an order pursuant to CWC section 13304 because the Discharger has caused or permitted waste to be discharged or deposited where it has discharged to waters of the state and has created, and continues to threaten to create, a condition of pollution or nuisance. The condition of pollution is a priority violation and issuance or adoption of a cleanup or abatement order pursuant to CWC section 13304 is appropriate and consistent with policies of the State Board and the Central Valley Water Board.
28. This Order requires investigation and cleanup of the site in compliance with the CWC, the applicable Basin Plan, Resolution 92-49, and other applicable plans, policies, and regulations.
29. As described in Findings 3 and 9, the Discharger is subject to an order pursuant to CWC section 13267 to submit technical reports because existing data and information about the site indicate that waste has been discharged, is discharging, or is suspected of discharging, at the property, which is or was owned and/or operated by the Discharger named in this Order. The technical reports required by this Order are necessary to assure compliance with CWC section 13304, including to adequately investigate and cleanup the site to protect the beneficial uses of waters of the state, to protect against nuisance, and to protect human health and the environment.
30. The issuance of this Order is an enforcement action taken by a regulatory agency and is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code section 21000 et seq.), in accordance with California Code of Regulations, title 14, section 15321(a)(2). The issuance of this Order is also an action to assure the restoration of the environment and is exempt from the provisions of the California

Environmental Quality Act (Pub. Resources Code section 21000 et seq.) in accordance with California Code of Regulations, title 14, sections 15308 and 15330.

31. Any person aggrieved by this action of the Regional Water Board may petition the State Board to review the action in accordance with CWC section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality, or will be provided upon request.

REQUIRED ACTIONS

IT IS HEREBY ORDERED that, pursuant to CWC sections 13000, 13304 and 13267, Union Pacific Railroad shall:

Investigate, clean up, and abate forthwith the effects of the waste discharged as a result of the 30 June 2007 train derailment at Storrie, Plumas County, in conformance with State Board Resolution No. 92 - 49 *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304* and with the Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (in particular the Policies and Plans listed within the Control Action Considerations portion of Chapter IV). "Forthwith" means as soon as is reasonably possible. Compliance with this requirement shall include, but not be limited to, completing the tasks listed below.

VERTICAL CONDUIT EVALUATION

1. **By 31 October 2008**, collect appropriate groundwater samples and borehole geophysical data to assess polluted depth intervals in the impacted Storrie Retreat private domestic well, recommend appropriate action, and provide a time schedule for implementation. A qualified California Certified Hydrogeologist, Professional Civil or Chemical Engineer, and toxicologist should professionally endorse recommendations.

FURTHER REMEDIAL ACTION REPORT

2. **By 31 October 2008**, submit a report of full scale biosparge startup operations, recommend appropriate further remedial action, and provide a time schedule for implementation. Include appropriate contingencies for future discovery of the Storrie Retreat domestic well as a pollution conduit below depth of investigation of current monitoring wells, and Methane in soil vapor greater than or equal to 10% of its lower explosive limit. Also include contingencies for Ethanol, denaturants, and relevant biodegradation byproducts in hyporheric water or down-gradient monitoring wells that indicate threats to the Feather River. A qualified California Certified Hydrogeologist,

Professional Civil or Chemical Engineer, toxicologist, and aquatic biologist should professionally endorse recommendations.

SLOPE STABILITY

3. **By 31 October 2008**, submit an appropriate contingency plan in the event of significant slope failure near the derailment site. Staff considers significant slope failure herein as an earth-, debris-, or rock-slide, potentially related to the 30 June 2007 waste discharge, and beyond the scope of an approved Storm Water Pollution Prevention Plan. A California Certified Civil or Geotechnical Engineer should professionally endorse the contingency plan.

CONTINUED QUARTERLY MONITORING

4. Submit **Quarterly Status Reports** by the 1st day of the second month after the calendar quarter in which the samples were collected. The first quarter report is due **1 May**, the second quarter report is due **1 August**, the third quarter report is due **1 November**, and the fourth quarter report is due **1 February**. Central Valley Water Board staff will review Quarterly Status Reports for adequacy relative to further site investigation and cleanup. Based on such reviews, the Central Valley Water Board Executive Officer may, at her discretion, issue additional site-specific monitoring and reporting requirements.

GENERAL REQUIREMENTS

5. Continue to reimburse the Central Valley Water Board for reasonable costs associated with staff oversight of investigation and cleanup. Failure to do so shall be considered a violation of this Order.
6. As required by the California Business and Professions Code sections 6735, 7835, and 7835.1, have appropriate reports prepared by, or under the supervision of, a registered professional engineer or geologist and signed by the registered professional. All technical reports submitted by the Discharger shall include a cover letter signed by the Discharger, or an authorized representative, certifying under penalty of law that the signer has examined and is familiar with the report and that to their knowledge, the report is true, complete, and accurate. The Discharger shall also state if it agrees with any recommendations/proposals and whether they approved implementation of said proposals.
7. Upon startup of any remediation system(s), operate the remediation system(s) continuously, except for periodic and required maintenance or unpreventable equipment failure. The Discharger shall notify the Central Valley Water Board within 24 hours of any unscheduled shutdown of the remediation system(s) that lasts longer than 48 hours. This notification shall include the cause of the shutdown and the corrective action taken (or proposed to be taken) to restart the system. Any interruptions in the operation of the remediation system(s), other than for maintenance, emergencies, or

equipment failure, without prior approval from Central Valley Water Board staff or without notifying the Central Valley Water Board within the specified time is a violation of this Order. Within 7 working days of a shutdown, the Discharger shall submit a Technical Report containing at a minimum, the following information:

- times and dates equipment were not working,
 - cause of shutdown,
 - if not already restarted, a time schedule for restarting the equipment, and,
 - a Cleanup Assurance Plan to ensure that similar shutdowns do not reoccur. Proposed Cleanup Assurance Plans are to be completed within 30 days of the system shutdown.
8. Notify Central Valley Water Board staff at least three working days prior to any onsite work, testing, or sampling that pertains to environmental remediation and investigation and is not routine monitoring, maintenance, or inspection.
 9. Obtain all local and state permits and access agreements necessary to fulfill the requirements of this Order prior to beginning the work.
 10. Continue any remediation or monitoring activities until such time as the Executive Officer determines that sufficient cleanup has been accomplished to fully comply with this Order and this Order has been either amended or rescinded in writing.
 11. Optimize remedial systems as needed to improve system efficiency, operating time, and/or waste removal rates, and report on the effectiveness of the optimization in the quarterly reports.
 12. Maintain a sufficient number of monitoring wells to completely define and encompass the waste plume(s). If groundwater monitoring indicates the waste in groundwater has migrated beyond laterally or vertically defined limits during the quarter, then the quarterly monitoring reports must include a work plan and schedule, with work to begin within thirty days of Central Valley Water Board staff approval, to define the new plume limits.
 13. Submit all written reports and analytical results to the Central Valley Water Board and electronic copies of all reports and analytical results over the Internet to the State Water Board Geographic Environmental Information Management System database (GeoTracker) at <http://geotracker.waterboards.ca.gov>. Electronic submittals shall comply with GeoTracker standards and procedures as specified on the State Board's web site.
 14. If the Discharger is unable to perform any activity or submit any document in compliance with the schedule set forth herein, or in compliance with any work schedule submitted pursuant to this Order and approved by the Executive Officer, the Discharger may request, in writing, an extension of the time specified. The extension request shall

include justification for the delay. Any extension request shall be submitted as soon as the situation is recognized and no later than the compliance date. An extension may be granted by revision of this Order or by a letter from the Executive Officer. Extension requests not approved in writing by the Executive Officer with reference to this Order are denied, and failure to perform tasks according to the original time schedule will be considered violations of this Order.

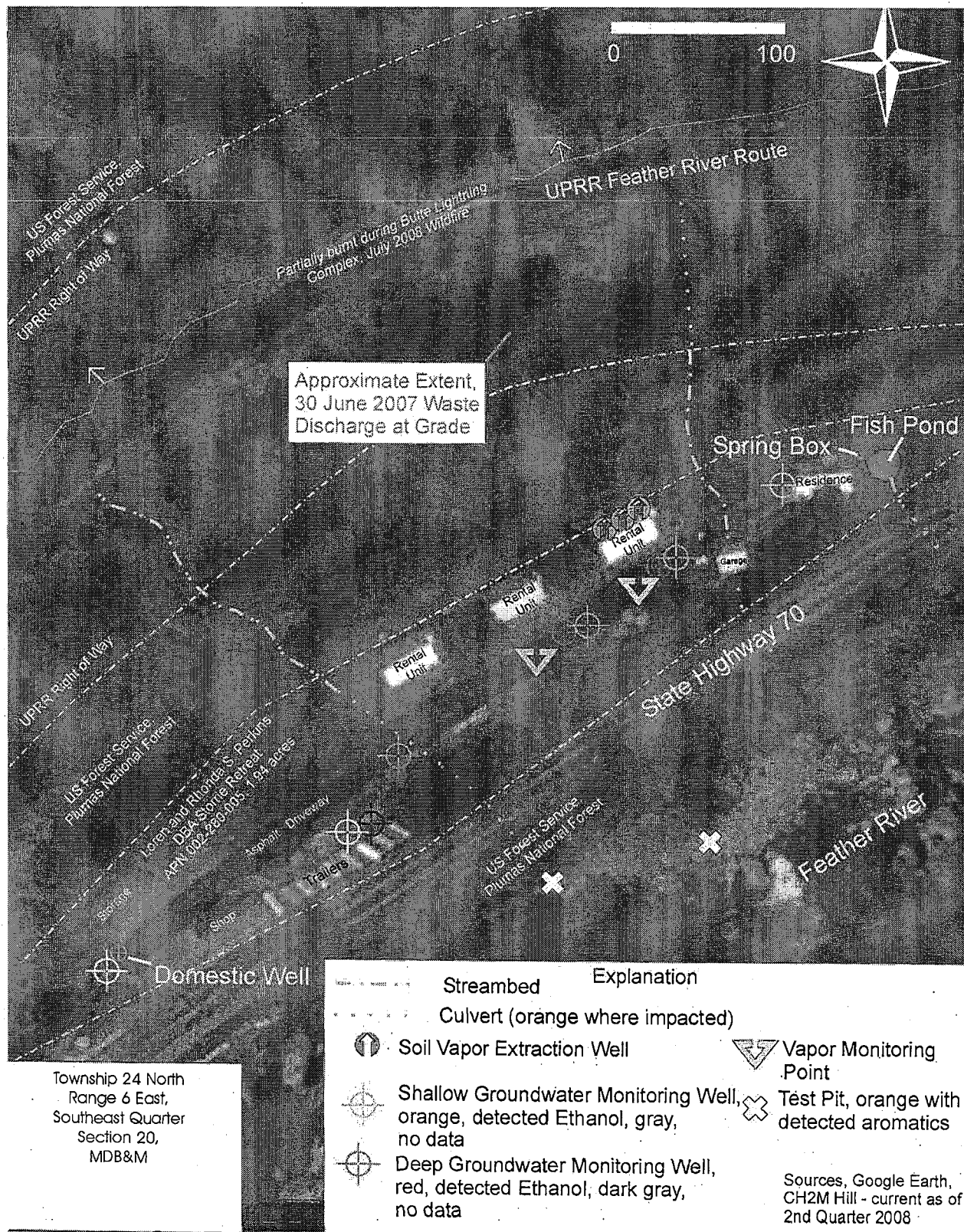
15. If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, or may issue a complaint for administrative civil liability.

Failure to comply with this Order may result in the assessment of an Administrative Civil Liability up to \$10,000 per day of violation pursuant to CWC sections 13350, 13385, and/or 13268. The Central Valley Water Board reserves the right to take any enforcement actions authorized by law.

This Order is effective upon the date of signature.

Original signed by
JAMES C. PEDRI, Assistant Executive Officer

23 September 2008
(Date)



2007 Spill Site;
Schematic, No Scale

